

# 2011 RULES FOR EUROBOT JUNIOR

PAGE 1 SUR 37



Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...





# ROBOTS PLAY THEIR GAMES

PAGE 2 SUR 37



... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

## CONTENTS

1. PRESENTATION.....	3
2. GAME OBJECTIVES .....	4
3. PLAYING AREA AND GAME ACTIONS DESCRIPTIONS .....	5
3.1. PLAYING AREA .....	5
3.2. STARTING ZONES.....	6
3.3. DICE GAME.....	7
3.4. LETTERS GAME.....	10
3.5. CHECKERS AND CHESS .....	13
3.6. BATTLESHIP.....	15
3.7. COOPERATION: DOMINOES .....	17
3.8. HORSES GAME.....	20
4. PROJECT PRESENTATION .....	22
5. ROBOTS.....	23
5.1. AUTONOMOUS PART (AP).....	23
5.2. ROBOT AND AP DIMENSIONS .....	24
5.3. POWER SUPPLY .....	25
5.4. COMMAND SYSTEM FOR THE ROBOT .....	26
5.5. CABLE .....	26
6. MATCHES.....	27
6.1. IMPLEMENTATION .....	27
6.2. THE MATCH.....	28
6.3. COUNTING POINTS .....	29
7. MEETINGS .....	30
7.1. APPROVAL .....	30
7.2. QUALIFICATIONS .....	30
7.3. FINAL PHASES.....	31
7.4. QUALIFICATION FOR EUROBOT JUNIOR FINAL .....	32
APPENDIX.....	33
1. References of paint.....	36
2. Security rules.....	36

1.





## ROBOTS PLAY THEIR GAMES

PAGE 3 SUR 37



... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

### PRESENTATION

Eurobot Junior contest is opened to young people from 7 to 18 years old (until A-level or equivalent) forming a club, a group of friends or in a school structure (pupils, schoolchildren or high school students). at the aim is to allow young people to be actors of their learning and to put into practice their knowledge and skills, by participating in a playful and friendly event.

A team is a group of young people who built a robot for the contest. A young person can only be a part of a single team, **even if teams belong to the same structure**, but we encourage the sharing of experiences between the teams. The project can be supervised by an adult (teacher, parent, animator, and so on) but the robot must be conceived and built by the young members of the team.

Please check the conditions of registration with the national organiser in your country.

Eurobot Junior has for vocation to take place in a friendly and sportive spirit. In any match, the decisions of referees are without appeal, with the exception of an agreement between all the parties.

EUROBOT JUNIOR WILL CONGREGATE TEAMS SELECTED ON THE NATIONAL FINALES IN FRANCE, BELGIUM, RUSSIA AND MAYBE OTHER COUNTRIES.



Read very carefully the rules from the first to the last page in order to acknowledge the differences with the lasts years!

2.



## GAME OBJECTIVES

Robots play family games in order to gain more points:

- **Dice game:** Robots must roll the dice on the center track to get the correct number.
- **Letters game:** robots must reconstruct a word that makes sense or not with the letters on the playground.
- **Checkers and chess:** robots must bring back the pawns on the chessboard and build playing element of different game.
- **Battleships:** robots must overturn opponent ships.
- **Cooperation: Dominoes** are randomly disposed, the robots must put them in order to reconstruct a run.
- **Horses game:** robots have to transport their horse during all match and bring it back to its starting point at the end.



## 3. PLAYING AREA AND GAME ACTIONS DESCRIPTIONS

### Important Notice:

Organizers commit themselves in respecting the best accuracy in the realization of the playing area. However, margins of +/- 2% compared to playing area dimensions and of +/-20% compared to game elements size will be allowed. Any complaint concerning these margins shall not be considered. The eventual modifications of this information will be indicated in a complementary document (Frequently Asked Questions) sent to every teams.



These margins are not applicable to robots' size constraints.

### 3.1. Playing area

The playing area is a rectangular plane, 3000 millimeters long and 2000 millimeters wide, made up of two wooden pieces (2000mm long, 1500mm wide each), inclined of 10% towards the public. The table's colour details are given in appendix.

A wooden edge, painted as precise in appendix, is 50 mm height from the playing area's floor. This edge is outside of the table so it does not enter in the playing area's dimensions.

The starting zones are squares located at each upper corner of rear and side edges (see § 3.2). A net attached to the outside of the playground, is located on a portion of the rear edge (corresponding to the blue "sea" drawn on the playground). The other elements constituting the game actions are arranged according to the drawings in annex.



All dimensions of the playing area as well as the positioning of variable components are indicated in the sketches provided **in specifications of the playing area only**. In case of ambiguity between the illustrations in the rules and in the specification, those of the specification will be taken into account.

## 3.2. Starting zones

They are located at the upper corners of the playground (at the junction between the borders back and side) and are represented by a square painted in white with a playing card symbol (Heart and Clubs) (Black on Right side and Red on left side, from public view).

Before starting, main robot and its Autonomous Part (see 5.1) shouldn't be out of the limits of the starting zone.

In case of a line following AP (Autonomous Part), it is allowed to place the AP's sensors on the start of the black line drawn for that purpose, outside the starting zone. But the AP's rest must, according to the previous rule, stay in the starting zone.

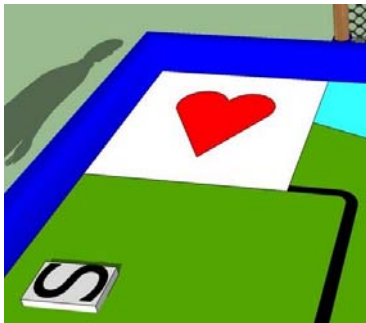


Figure 1 et 2: Starting zones

A team will be declared withdrawal, if the robot does not completely leave the starting area and if its AP stayed motionless.

The walkover will be declared if either the robot or the AP has left the starting area (see 7.2).



## 3.3. Dice game

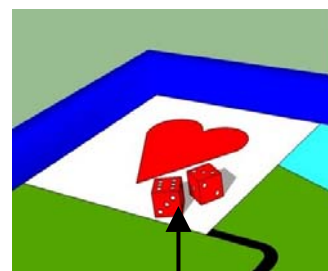
The dice are playing elements used very often. They can be part of a game or the actual game. The robots will throw them to reach the chosen figure or, for example, to advance the pawns in a game of goose.



### a. Description of playing elements and arrangement at the start of the game

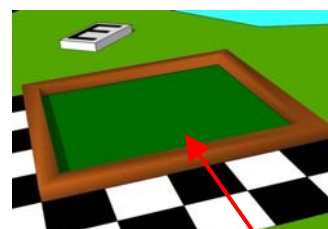
For this action, robots have the following playing elements:

- Dice, 2 per team, are in foam. They are in the starting area at the beginning of the game, which means that teams can, if they wish, embed these dice in the robot at the beginning or pick them up and place them on the playground during the game.



Dice in starting position

- The central track, represented by a diamond square, is located in the center of the playing area. This zone is fixed, drawn on the playground and fully enclosed by brown brackets.



Central track

- The numbers drawn, represented by real playing cards (spade, heart, clover and tile). They contain the numbers 4 to 10 inclusive. The referees will have these cards from the beginning to the end of the match.



Card example

## b. Action and Restrictions

### Action:

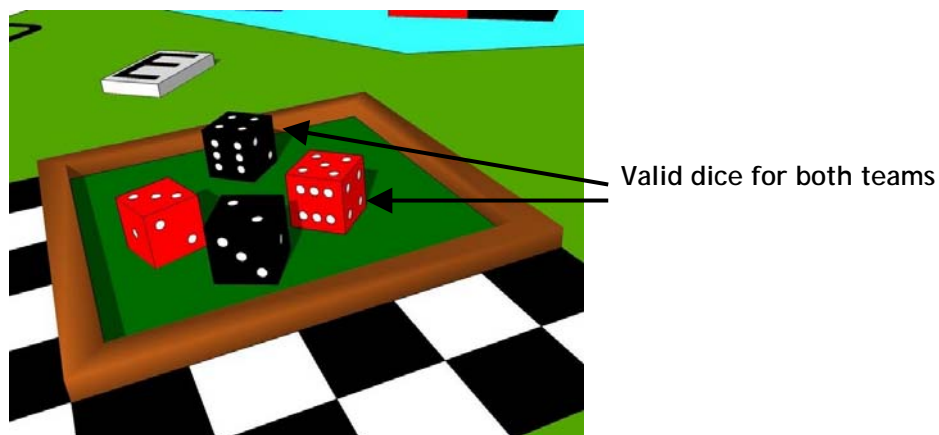
Both dice must be thrown or dumped on the track (diamond square) in the center of the playground. If the number drawn before the match is not achieved during the first roll, each team can turn its dice on the track to get the drawn number.

Before the match, the team can place the dice anywhere inside the departure area. the robot can carry the dice from the beginning or come back for them later during the match.

Just before beginning, each team draws a random card from the referees. The resulting figure is what the team needs to achieve with two dice.

The possible drawing numbers are between 4 and 10.

At the end of the game, it's the number of dice in the track and completely flat on the table that counts. Each dice counts for 3 points. A bonus of 4 points is awarded if you achieved the drawn number.



### Restrictions:

The dice cannot be driven on the track but only thrown or cast .

The robots are not allowed to enter the track, in other words, elements of the robot in contact with the ground should not touch the inside of the track to roll the dice. They cannot roll on the pieces of wood surrounding the track neither.

Before the game, the dice are placed in the starting area or in the robot before the drawing of the figure. This action is therefore done within the 3 minutes of



preparation allowed. Once the drawing of number as been done, the teams cannot change the position of the dice or the faces on which they are.

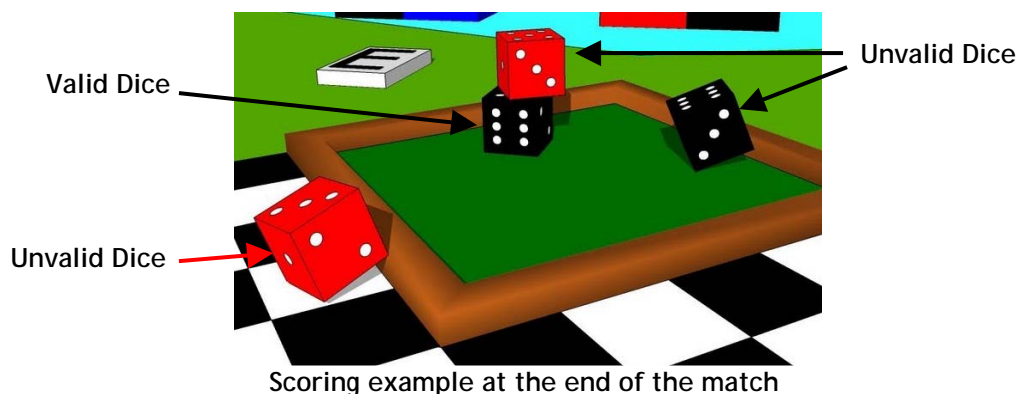
If one or more dice are out of the central track at first launch, the team can take them back and try again to launch them. Only dice content within the central track is playable, that is to say that the team may return or move to get the right number. The points are counted later in the game.

You can request removal of the dice before the game if the team does not realize this game action. For the teams doing it, all dice stay on the playing area, whatever the number of dice used in the match.

It is forbidden to touch and move the opponent's dice intentionally inside and outside of the central track. Any non-accidental handling of the opponent's color dice during the match will be penalized by a penalty.

If a dice is moved inadvertently, and that the figure recorded is changed, the offending team will put back the right number.

At the end of the game, the bonus will be awarded by the referees only if the initially drawn figure is achieved by the sum of two dice. It is therefore not possible to obtain it only using a single dice in the central track.



## 3.4. Letters game

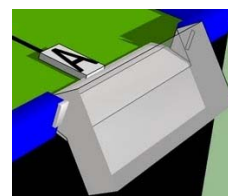
Traditionally, the word game is a board game or puzzle in which the player or players must form words using letters. There for the robots will have to reconstitute a word from scrambled letters on the playground.



### a. Description of playing elements and disposition at the beginning of the game

Playing elements are:

- The letters, represented by wooden rectangular parallelepiped, are arranged initially on the playground following the drawings in appendix and specifications. All letters are blue except "A" painted the colour of the team. The letters are written on both sides of the rectangle.
- A black line starting from the starting area to the letter A, in front of the words' bins, is proposed for possible autonomous parts that can follow a line. Warning! The realization of an autonomous part is optional!
- Words' bins, one per team, are located on the front edge (facing audience) on the outside. They are open on top and side of the playground.



## b. Action and Restrictions

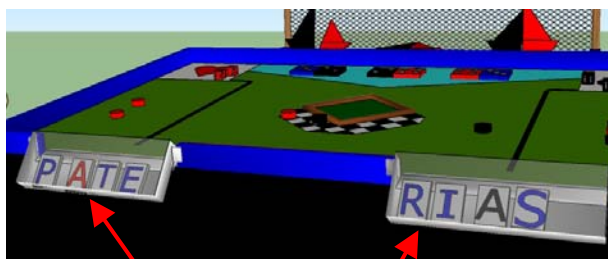
### Action:

The robots must form a single existing word, chosen from a predefined list, containing from 1 to 5 letters at most, in the words' bins. For this, different letters are placed on the playing area (see drawings in the specifications). Robots must move and put it in order in front of the public in the bin

**Warning:** Letters are common to both teams except the "A" for each team. As the letters are on the playground and they are not positioned in or in front of the tray, both teams are free to get all these letters.

At the end of the match, if a word is composed of 3 to 5 letters, selected from the list below, in order and placed in the tray, then the value of this word is tripled.

The number of letters in place and facing the audience, in the words' bin counts. The value of the word can be tripled if it is a word in the list. Each letter is worth 2 points. One word can bring up to 30 points maximum.



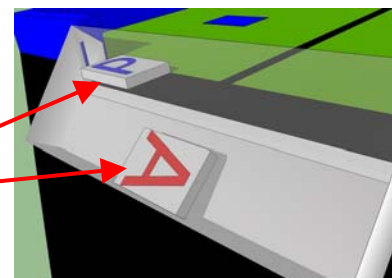
Valid letters but score not tripled

### Restrictions:

Only the letter A belongs to each team. It is forbidden to take the opponent's A letter. A penalty will be given to the offending team for injury.

Robots cannot pick up the letters in the opponents words' bin. The letters are only valid when they are in the right direction, in other words, readable and facing the audience

Invalid letters  
example





## ROBOTS PLAY THEIR GAMES

PAGE 12 SUR 37



... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

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Words formed must come from the following lists to triple their value:

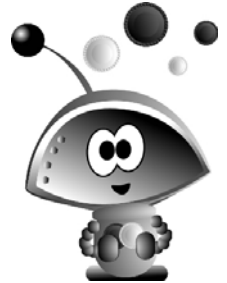
3 letters words	4 letters words	5 letters words
AIR	PART	PAIRS
TEA	TSAR	PASTE
PER	RATE	STARE
SIT	TIPS	TAPIR
ASP	SEAR	RIPES
RAT	STAR	SPITE

The words of one or two letters are free because they provide points of each letter only.



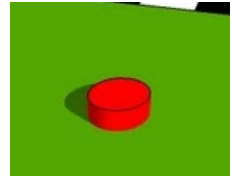
## 3.5. Checkers and chess

Among the traditional games, those using a chessboard are the most conventional. In particular, we find the checkers and chess. The robots will then reconstruct pieces of these games: checkers, pawns, kings and queens and place them on the board in order to play the traditional games.



### a. Description of playing elements and disposition at the beginning of game

- Pawns, checkers, kings and queens, are represented by pucks of team colour (4 red and 4 black). These pucks are positioned as in the drawings in appendix.



- The chessboard is represented by a set of black and white squares of the same size. It is located in the lower part around the center track used for dice.



### b. Action and Restrictions

#### Action:

Robots must move the pucks onto the chessboard area and build a pawn, a checker, a queen and / or a king.

To build it, you must stack from 1 to 4 pucks on each other.

1 pawn = 1 puck

1 checker = 2 pucks stacked

1 queen = 3 pucks stacked

1 king = 4 pucks stacked



King Queen Checkers Pawn

... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

It's the number of pallets stacked flat and fully retracted in the checkerboard area that counts. Here are the points awarded for this action:

1 pawn: 1 point

1 checker:  $1+2 = 3$  points

1 queen:  $1+2+3 = 6$  points

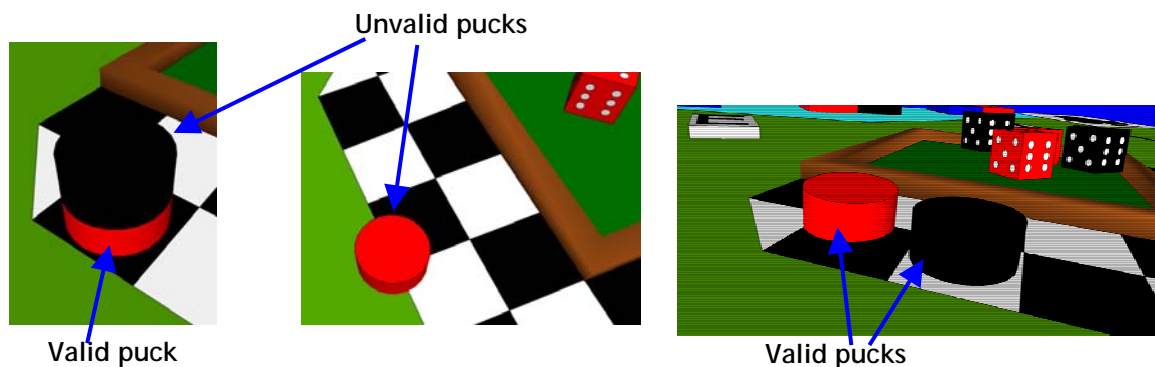
1 king =  $1+2+3+4 = 10$  points

### Restrictions:

The created playing elements are valid only if the first puck is fully positioned on the chessboard.

The stacked pucks are valid only if they hold over each other in balance, without support of another element, and by their own weight.

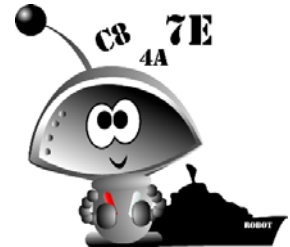
A puck is not validated if it is placed on its edge and not flat in the chessboard area





## 3.6. Battleship

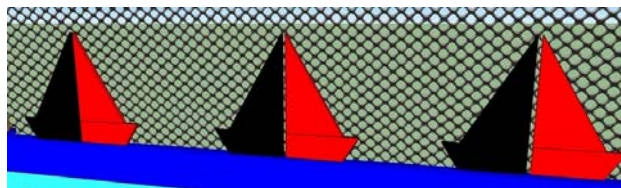
Battleship is a game in which two players must place boats of various sizes on a grid kept secret and try to sink enemy ships. The robots will have the opportunity to play this game and overturn the adverse boats floating on the sea.



- a. Description of playing elements and disposition at the beginning of the game.

Playing elements are:

- The **ships**, 3 per teams, are represented by wooden panels. Each boat has two independent pieces (one Red and one Black). Initially all the panels are vertically resting by their own weight against the outside of the back edge of the table.



- The **projectiles** are loaded into the robot before the game started. 4 are allowed per team. The type of projectile is left free to the team with the exception of round elements. However it is the responsibility of the team to ensure the use of non-dangerous projectiles towards the playing elements, and people surrounding.
- The **sea** is the limit zone for launching. It's represent by a blue zone painted on the playground. It's located against the back edge between the two starting zones



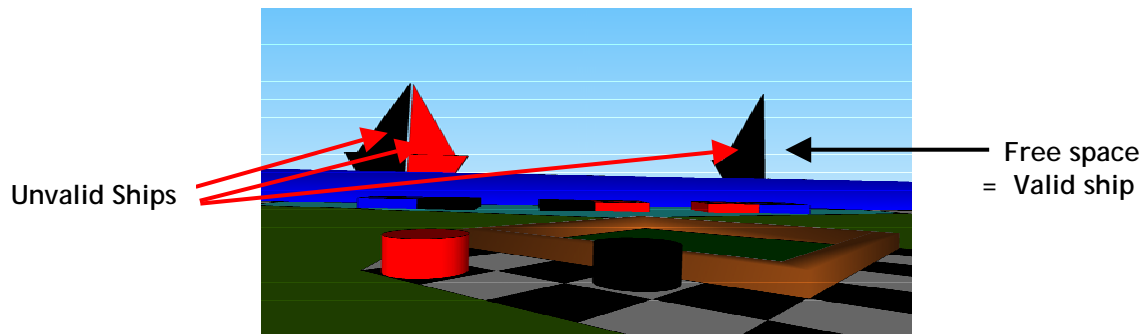
Blue area = SEA

## b. Actions et restriction

### Action:

Robots must overturn the opponent ships (opposite colour to the colour of his departure). They need to launch projectiles to reach them and knock opponent's wood panels, representing ships.

Only panels completely overturned against the back edge will count. Each panel completely overturned scores 6 points.



### Restrictions:

Robots can only launch their missiles outside of the sea (blue area drawn on the playing field facing the boats) and departure areas.

Robots, nor any of their elements cannot touch the boats to take them down. Only launching projectiles are allowed.

If the robot overturns its own ships, points will be awarded to the opposing team.

All types of projectiles are accepted with the exception of anything that has a round shape. Teams must bring their items for review during the approval.

## 3.7. Cooperation: dominoes

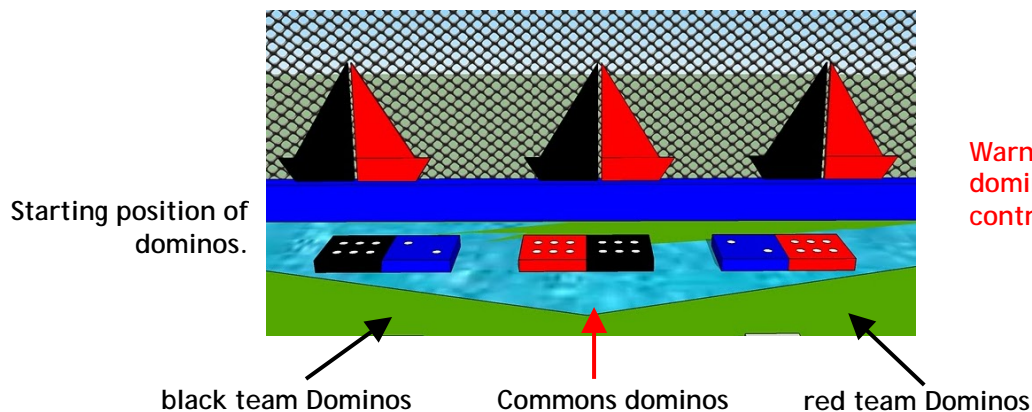


The game of dominoes is a game from China composed of 28 parts: the dominoes. The robots will work together to play this game and put in place a series of dominoes.



### a. Description of playing elements and disposition at the beginning of game.

- **Dominoes**, wooden parallelepipeds, are based on the playing field by their own weight. They are fixed and rotate around an axis. They are 3 for each team: one for each team (with one side blue and one side Black or Red depending on the starting color), a common (with one side red one side and one Black). The dominoes are located near the black edge in the blue zone.



Warning: numbers on dominoes are not contractual

## b. Action and restrictions

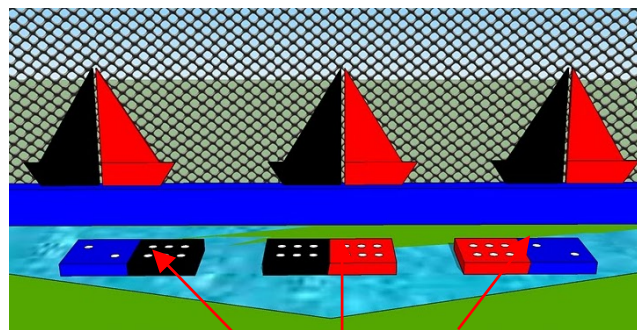
### Action:

Together, the robots must put in good order all three dominoes.

Each team must turn its color domino by placing the blue side towards the border.  
The third domino is common (the presence of two colors Black and Red above), it must be turned by one of the team to match the colors.

This is the correct positioning of the 3 dominoes in the position, colors and ordered, that counts. The correct placement of the teams' domino gives 3 points. Cooperation gives a bonus of 7 points to each team.

**Warning :** During the finals, each dominoes well placed awards 3 points, which make 6 points.



Valid dominoes and cooperation done

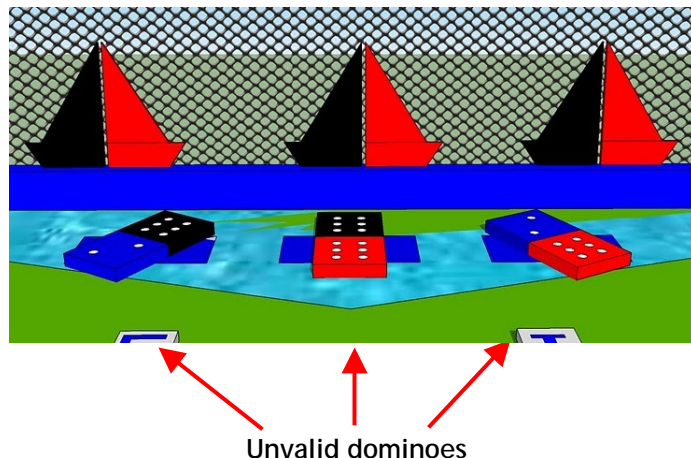
## Restrictions:

The cooperation action is awarded if the two teams have talked together before the match and have agreed to play or not this action. The referees should also be warned to avoid them a better observation of the action and present the panel "Cooperation" for the public.

During the finals, cooperative action is no longer available. In this case, the points of the third domino will be awarded to the team that placed it first.

The action will be validated only if all the dominoes have been positioned in their location and in the correct order of colors.

The dominoes are set on the playground and can not be removed.





## 3.8. Horses game

The game of little horses, arrived in France in 1930, is a board game where players move pawns looking like horses on a single journey and return to their starting point first. The robots will learn to play the game by moving their own little horse.



### a. Description of playing elements and disposition at the beginning of game

- Horses are represented by a knight. They are placed visibly on the robots at the beginning of the game. There is one horse per team, colored like the starting area. The base of the horse has Velcro, hook side to allow better attachment to the robot



### b. Actions and Restrictions

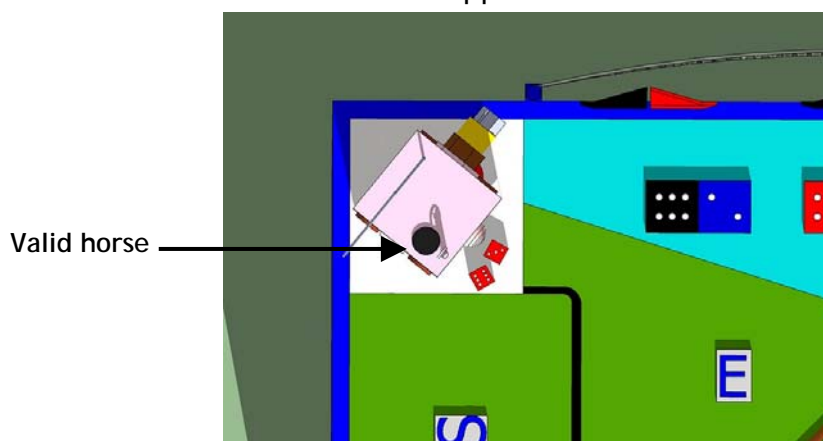
#### Action:

The robots must take and keep the horse of their color throughout the match and bring it back to the starting area at the end of the match.

The action will only be valid if the team move and bring back his robot in the starting area completely at the end of the match, in other words all elements of the robot in contact with ground inside the area. The knight which has been brought back completely to its point of departure award 5 points.



This action cannot be used as test alone for action on the table during the approval.





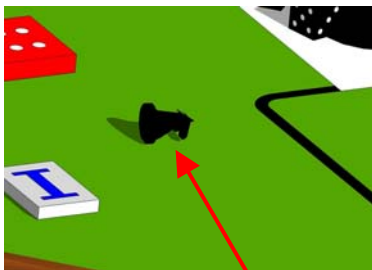
## Restrictions:

The horse must be placed visibly on the robot because it is a distinctive feature for the public to differentiate the red team and the black team.

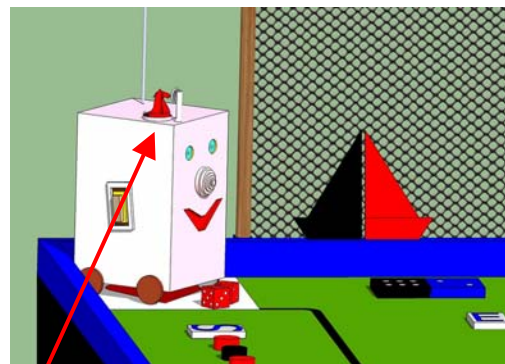
Remember to provide a place for the horse on the robot.

If the horse falls during the match on the playing field, whatever the location, the team cannot take it back. Team can ask to a referee, if the horse disturbs lot or block the opponent robot and it is achievable easily, to remove it from the playing field.

At the end of the match, teams must leave the robot in place and not touch it until the referees give them permission



Not valid fallen horse



Horse visible at the beginning of the match



## ROBOTS PLAY THEIR GAMES

PAGE 22 SUR 37



... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

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### 4. PROJECT PRESENTATION

This year, again, the presentation of Eurobot Junior project by the team (work throughout the duration of the project, distribution of the tasks ....), the robot (done systems, strategies discussed and the Autonomous Part is in place. It will be done by presenting a poster visible by all the participating teams and the audience.

#### Restrictions:

This presentation will be realised on a A1 format poster ( 594x841mm) minimum. For the other points, the teams are free to use any support they wish to report on their project.

#### Evaluation:

The poster must be presented to the referees when you go to the robot's homologations. The teams can present her whole project. It will count for the homologation.

During the meeting, a jury will come to examine each poster, discuss with the team members in order to award a special prize to the best presentation.





## ROBOTS PLAY THEIR GAMES

PAGE 23 SUR 37



... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

### 5. ROBOTS

Each team cannot homologate more than a single robot and a single autonomous part (AP).

An autonomous part can play only with the robot with which it was conceived and approved. We cannot re-homologate it with another robot.

Teams have to build the robot and its system of piloting (or of command). These two parts are connected by a cable which allows the supply of the robot with electricity and to pilot it.

A robot or its autonomous part (cf. 5.1) mustn't block the opposite robot or the opposite autonomous part. In case of voluntary action of this type indicated by the referees, the team can be penalized (cf. 6.3).

A robot must not cause voluntarily damage to the opposite robot, or to the playing area.

Any action aiming at preventing the good progress of the game will be sanctioned.

#### 5.1. Autonomous Part (AP)

The robot has the possibility of releasing an autonomous part. Mind, this one must not remain voluntarily immovable in order to block the game, and its departure shall not require any human intervention once the match is started.

A robot containing its own dimensions, its own power supply (battery) and its own intelligence (no remote control) is considered as autonomous.

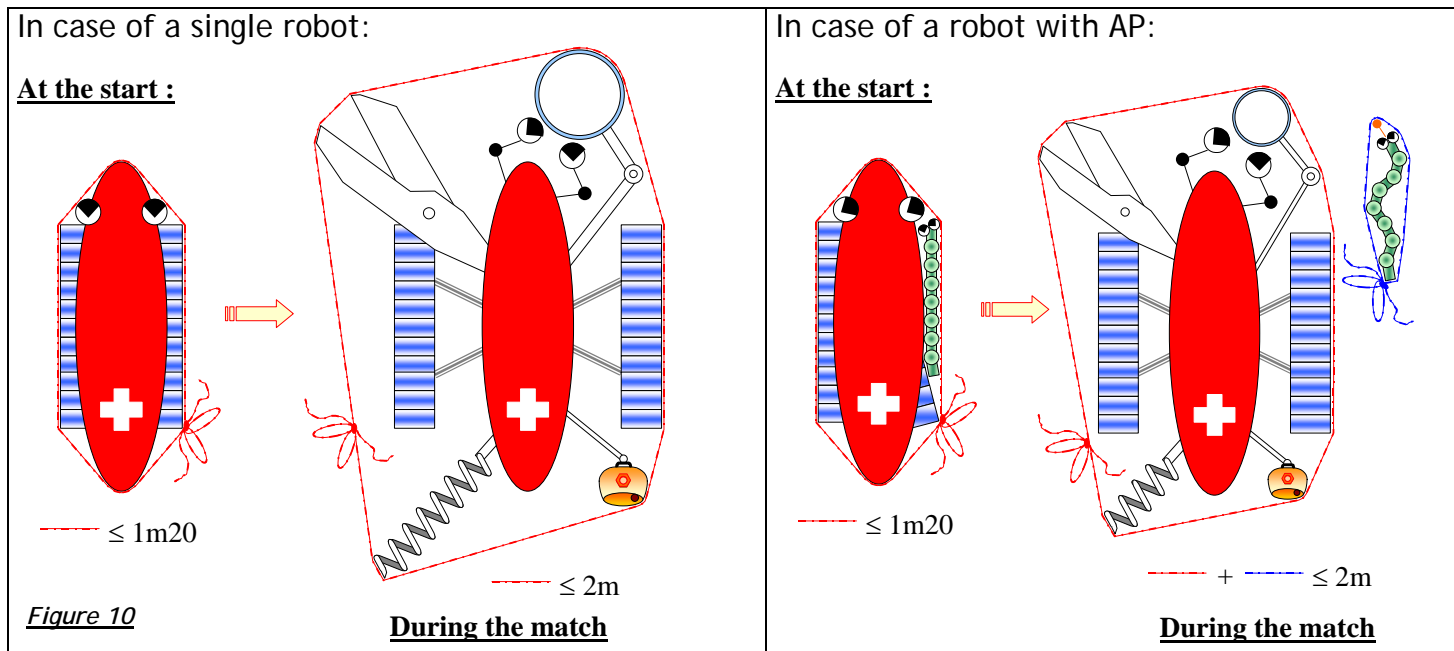
The autonomous part can realize all the authorized actions of the game as soon as it has separated from the robot. It has to have no connection between the robot and the AP, except for the signal for departure.

The construction of an autonomous part is optional.



## 5.2. Robot and AP Dimensions

Perimeter of the robot is measured as shown on this plan:



The perimeter of the whole robot and its AP must not exceed 1200 mm at the start of the match. The sum of the perimeter of the group robot + AP totally spread must not exceed 2000 mm during the match.

The height of the robot and the AP must not exceed 400 mm at first and during the matches.



at the start in both configurations, the whole must not exceed the starting area. An exception is given for the parts of the robots able to follow a line ( see chapter 3.2 for the conditions and the definition of the starting area.

The robot and the AP have to consist of united elements (and cannot contain and put down parts or elements on the playing area).

## 5.3. Power supply

The source of energy used by the robot in the cable is only electric. The authorized maximal voltage is 13,8 V (measured between 2 wires of cable and the robot).

This power source is not supplied during the competition. On the other hand, the teams have access to the sector (E.D.F. 220V/50Hz, French plug in France need adapter!) and can use batteries (they must be waterproof and with a maximal tension of 13,8V).

Mind! The supply systems must be easily transportable.

Teams must be able to go up or down the stairs to get to the stage where matches take place.

All the potential power supplies stored in the robot are authorized (batteries, springs, compressed air, gravitational energy...), except sources of energy operating with chemical reactions as combustions or pyrotechnic processes, which are forbidden for safety reasons. Furthermore, the use of corrosive products is forbidden and the projections of liquids are not admitted.

Systems with compressed air (pneumatic systems) must not exceed a pressure of 4 Bars and a product Pressure per Volume of 80 Bars per Liter, according to the current law.

In a general way, all systems aboard robots has to respect the current laws; in particular, the elaborated systems must not put in danger neither the team, nor the organizers, nor the public, as well on the stands as during the matches.

Generally, any system considered dangerous for the audience shall be refused. It is notably forbidden to use power supplies with bare part live charged (battery clips must be covered!).

Sorry friends... I can't play with you, I am badly isolated...





## ROBOTS PLAY THEIR GAMES

PAGE 26 SUR 37



... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

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### 5.4. Command system for the robot

Every team must have a command desk, activated by a single pilot.

The system of command is a device allowing the control of the robot's electric system. It is connected with the robot only by an electric cable. Any other communication system in-between the robot and the outside during the matches is forbidden.

### 5.5. Cable

The electric cable connecting the robot with its system of command is not supplied;

It must be conceived and realized by every team, according to its needs.

The cable must measure a minimal length of 2 meters between the electrical outlet and the alimentation and 5 meters (minimum) for reasons of mobility of the robot on the playground. It is maintained in the air by the co-pilot using a pole supplied by the organizers.

During the match, the co-pilot does not have to interact in the piloting nor in the adjustments of the robot (voltage of power supply for example).

The cable must not be used to drive the robot, or help it up right in case of reversal at the risk of penalty.







## ROBOTS PLAY THEIR GAMES

PAGE 27 SUR 37



... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

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### 6. MATCHES

The matches have a duration of 90 seconds.

Only 2 persons by team are authorized to go on scene (and behind scene) to compete for the matches: The driver and the co-pilot for the match.

#### 6.1. Implementation

At the start of a match, the elements of the playing area and the playing area itself are settled according to the indications given onto the plans of the appendix (see bottom).

At the arrival on the playing area, each team has 3 minutes to proceed to the implementation of its robot and the possible autonomous part. The system of command is placed near the playground.

It is asked to reduce at least the whole necessary equipment for the implementation of the robot (a single power socket can be supplied for each robot).

A robot which is not ready at the expiration of this delay is declared failed for the match. Attention, the opponent robot will have to play its match alone on the playground and need to mark points to be declared victorious. (see 7.2)

When 2 robots are in place, the referee asks the participants if they are ready. No contesting can be made on the arrangement of the elements of the game after the beginning of the match.





## ROBOTS PLAY THEIR GAMES

PAGE 28 SUR 37



... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

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### 6.2. The match

**Attention:** for the final phases, also read the part 7.3.

At the signal of the referee, each robot started up and evolves under the control of the pilot.

On no account it is allowed to touch robots, AP, elements and playground during the match.

In case of absolved requirement, the referee can however authorize an action. Any manual intervention on a robot, an AP, an element or the playground, without explicit authorization of the referee, provokes the elimination of the team for this match (failed).

No element taken out accidentally of the playing area can be put back before the end of 90 seconds.

At the end of the match, nobody, except the referee is allowed to touch the robots and the elements of the playing field. The referees count the points. They give the result of the match, included the points of each teams. If both teams agree, they can take their robot and join their pit. If they do not agree, they clarify. The robots stay in place until the dispute is resolved. The decisions of the referees are irrevocable.

In case of situation with difficult arbitration, the referees save themselves the decision to replay or not the match.

If neither team has marked any point during the 90 s of the game, the result of the match will be a double defeat.

We consider as being failed a robot and an AP not going completely out of the starting zone during the match (see left 3.2) or after a decision of refereeing.





## ROBOTS PLAY THEIR GAMES

PAGE 29 SUR 37



... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

### 6.3. Counting points

This year, at the end of the match, the referees will count the points of each team in the following way (for more details of the points giving actions see sections 3.3 to 3.7)

3 points by dice in the track and completely flat

4 points if you achieved the drawn number

2 points for each letters well place in the words'bin of the team, readable and facing the audience

Number of letter x 3 if the word is in the list

1 to 10 points for stacked pallets flat and fully retracted in the checkerboard area.

6 points for each ship completely overturned

3 points for the correct placement of the teams' domino.

7 points for a valid cooperation in dominos placement

5 points for the knight which has been brought back completely to its point of departure

#### Penalties

A penalty is a **subtraction of 10 points** from the result of the match and the general classification. A negative score will be rounded off in 0.



#### *Reminder:*

The penalties have for objective to compensate for damage after a possible incident during the progress of the game. A situation with penalty is considered as the non application of the rules game, **this type of situation has to remain exceptional !!!** In case of repeat offence, by a team, or actions carrying in penalties or not allowed, the referees reserve the right to declare the team fails. The committee of refereeing will be also attentive to the penalties distributed between several levels of meeting (region-nation-Europe).





## ROBOTS PLAY THEIR GAMES

PAGE 30 SUR 37



... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

### 7. MEETINGS

- National Final: the French final will be organised at the end of March 2010 - beginning of April, 2010. Between 3 and 5 teams will qualify for the European final "Eurobot Junior".
- Eurobot junior is the last stage which gathers, always in the same friendly spirit, teams coming from various European countries.

For each of the meetings the progress follows the following phases:

#### 7.1. Approval

- **Pre-Approval :**

Before the beginning of the meetings, robots and autonomous parts are examined by a referee who verifies their accordance with the rules. The robot and the AP must be able to easily complete all of their actions.

- **Approval :**

The robot and/or the AP have to, in 90 seconds, mark at least one point (by throwing dice, form a word, reconstruct pieces of a chess game, overturn the adverse boats or put in good order on domino). The robot and the potential AP are put in a real match situation except for the presence of any opponent.

If the set constituted by the robot and the AP fills these conditions, it is declared approved.

#### 7.2. Qualifications

During the qualification phase, the approved teams will have the opportunity to play at least 3 matches.

On every meeting, each team wins bonus points in the following way:

- For victory: total points on the field + 8 Bonus points
- For a draw: total points on the field + 5 Bonus points
- For defeat: total points on the field + 2 Bonus points
- For fail: no Points





## ROBOTS PLAY THEIR GAMES

PAGE 31 SUR 37



... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

The ranking to select the teams qualified for the final phase is based on the number of points.

This ranking is also used to select the qualified teams for the national and European finals.

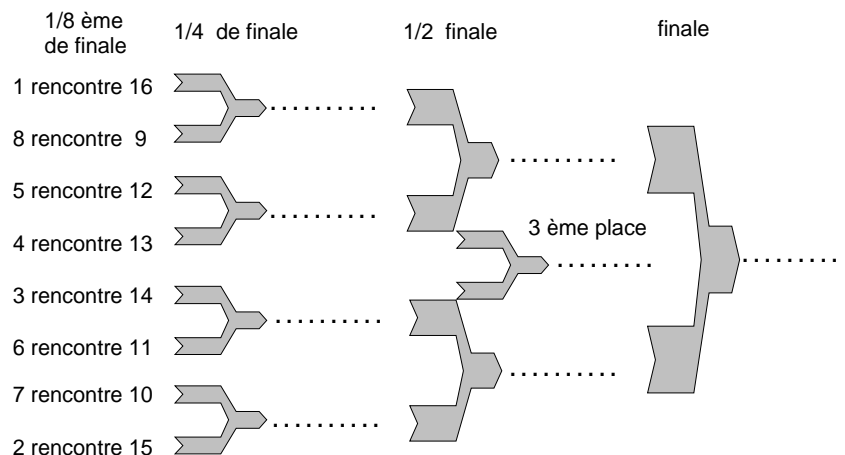
In case of a tie in the points at the end of the qualification rounds, the winning teams will be chosen based on the following criteria:

- The team which has cooperated more
- The team which has more victorious match
- The team which has the most pucks on the chessboard area
- The team which has overturn the most boats

### 7.3. Final phases

At the conclusion of the qualifying phase, the best 8 or 16 teams (according to the number of approved teams) form the order of the matches of the final phase according to the plan shown aside.

The meetings of the final phase result in direct knockout.



In case of a tie at the end of a match of final phase, the first team to have overturn all of the opponent ships will be declared the winner.

Finale will be played in two winning matches, during the regional meetings as well as during the national finals (France, Belgium, etc.) and Eurobot Junior.

Reminder: in final phases, cooperation does not exist anymore,





## ROBOTS PLAY THEIR GAMES

PAGE 32 SUR 37



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... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

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### 7.4. Qualification for Eurobot Junior Final

Each country participating in Eurobot Junior organizes a national meeting to determine teams which will qualify for the European meeting.

The first 3 teams at the conclusion of the finals (and not at the conclusion of the qualifying phases) will be qualified for Eurobot Junior final.

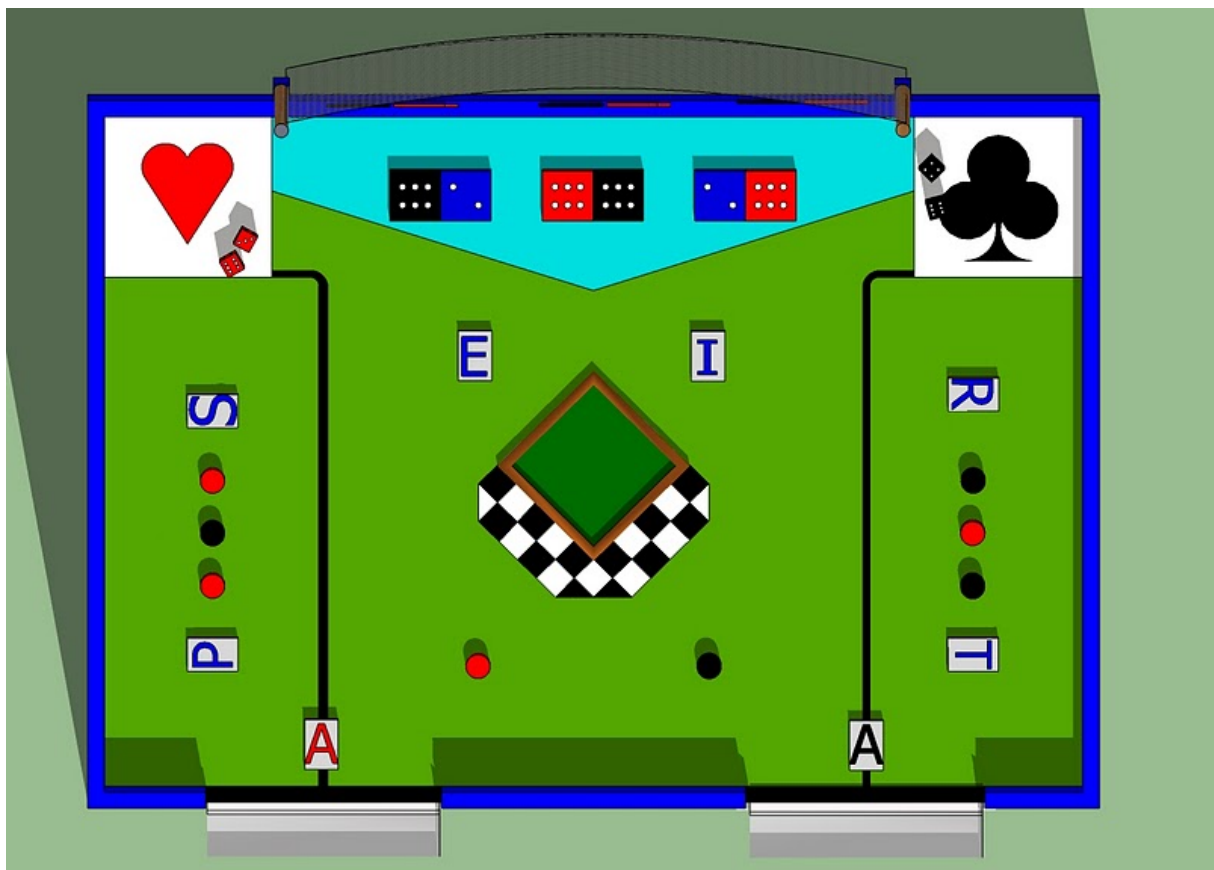
If the organization allows it, one or two extra teams, chosen amongst the teams having received a Special award, may qualify for the European final.





## APPENDIX

Playing field see from over

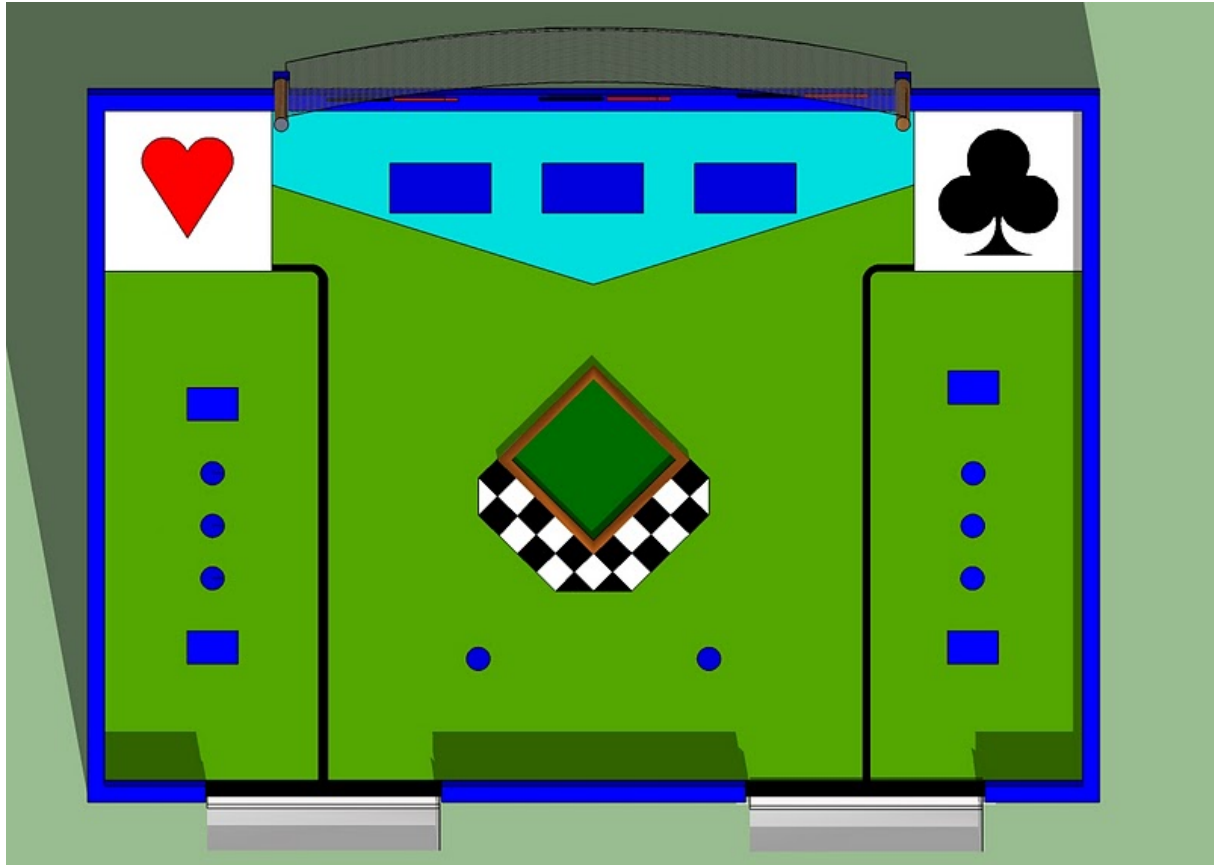


Elements game in starting position

## ROBOTS PLAY THEIR GAMES

PAGE 34 SUR 37

... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

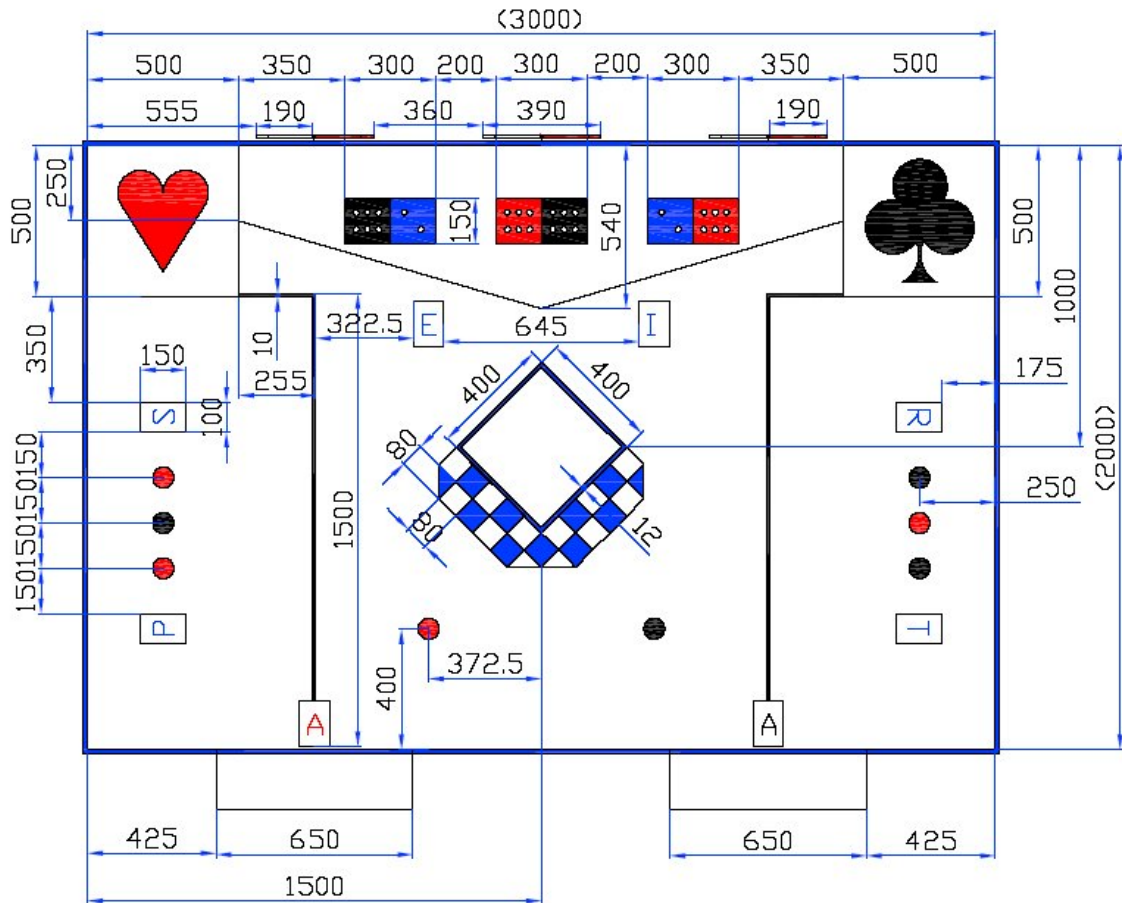


Position of elements' locations

# ROBOTS PLAY THEIR GAMES

PAGE 35 SUR 37

... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...





# ROBOTS PLAY THEIR GAMES

PAGE 36 SUR 37



... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

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## 1. References of paint

	Colour	Type of paint	Reference
Clubs' depart zone, game elements, chessboard, line	Deep black	Satin-finished	RAL 9005
Depart zone, chessboard	Road sign white	Satin-finished	RAL 9003
Game elements, heart's depart zone	Fire red	Satin-finished	RAL 3000
Area of game (important for robots following lines)	Green Yellow	Satin-finished	RAL 6018
Elements location, outside edge	blue	Satin-finished	RAL 5005
SEA	blue	Satin-finished	RAL 5012

## 2. Security rules

You will find below a list of safety rules to be taken into account.  
This list is not exhaustive and may evolve according to the current legislations.

As a general rule, you have to elaborate systems which answer criteria of manufacturing which do not put in danger your team as well as the public on the stands and during the matches.

That is why we ask you to make sure that your systems are in accordance with the current legislation.

### General precautions:

The road leading to gaming tables can contain staircases, notably during the access to the scene. The driver and the co-pilot are the only persons of a team authorized to enter on the scene and the back stage. The systems of supply and command must be easily transportable.

### Embedded Voltage:

Every robot will have to correspond to the legal standards concerning the low voltage. The internal tension of the robots must not exceed 13,8 V.

To avoid any risk of fire, it is asked to pay particular attention on the choice of supply leads, according to the intensity of the currents crossing them.





## ROBOTS PLAY THEIR GAMES

PAGE 37 SUR 37



... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules... Rules...

It is also strongly advised to protect the electric installation with a fuse, cabled in the closest to batteries.

If the team chooses a supply by batteries, we remind that only waterproof batteries can be used. The batteries of car, truck are forbidden.

### Systems with compressed air (pneumatic)

Any system under pressure will have to respect the current law according to the French General Council of Mines.

Reminder of the decree 63 of January 18th, 1943 and Order of July 25th, 1943:

- Maximal working pressure: 4 bars
- Tank maximum pressure x volume product: 80 bars x maximum liter.

Further information on:

<http://www.industrie.gouv.fr/sdsi/dgap/textes/1498-2.html>

### Laser source

The usage of laser source is allowed on the condition of being able to justify its membership in the class 1. A laser of class 2 is tolerated if the laser spotlight can never cross the face of anybody in its normal functioning. The lasers of class 3 and 4 are totally forbidden.

Mind! Some low-cost laser pointing devices generate powers close to the laser of class 3. This is the reason why it is asked the corresponding documentary evidence indicating the membership in a class.



For all your questions and remarks, a referent of the refereeing committee will answer on the forum of Planete Sciences in the Trophées 2010 section

<http://www.planete-sciences.org/forums/>  
and [eurobot-junior@planete-sciences.org](mailto:eurobot-junior@planete-sciences.org)

All the organization team of the Trophies of robotics wishes you a lot of fun and success in your realizations and hope to see you soon around a gaming table !

Robotically,

The refereeing committee of the Trophies of robotics and Eurobot Jr.

This file is a translation of the official Eurobot junior rules, you can find the original file there (in french):

[http://www.planete-sciences.org/robot/trophees/docs/Reglement\\_T2009.pdf](http://www.planete-sciences.org/robot/trophees/docs/Reglement_T2009.pdf)

